

What is claimed is:

1. A device for monitoring a measuring system of an electric drive, including at least one measuring system (12) for detecting at least one measured quantity of an electric drive (10), at least one controller (78) which receives at least the measured quantity detected by the measuring system (12) and generates at least one manipulated variable for controlling the drive (10), characterized in that at least one signal processor (34, 73, 79, 89, 91, 93) is provided for detecting errors in the measuring system (12).
2. The device according to Claim 1, characterized in that the signal processor (34, 73, 79, 89, 91, 93) for error detection in the measuring system (12) receives at least one quantity (IQ_SOLL, IQ_Ist, UQ_SOLL, FLUS_Ist, 65) generated by the controller (78).
3. The device according to one of the preceding claims, characterized in that the signal processor (34, 73, 79, 89, 91, 93) for error detection in the measuring system (12) receives at least one quantity (a_ist) generated by the measuring system (12) and/or derived therefrom.
4. The device according to one of the preceding claims, characterized in that the signal processor (34, 73, 79, 89, 91, 93) for error detection in the measuring system (12) compares a quantity characteristic of an error case in the measuring system (12) with a limit value (G, n_modell, n_sensor) and generates an error signal (35, 75, 92, 94) which indicates an error in the measuring system (12) as a function of this comparison.
5. The device according to one of the preceding claims, characterized in that the signal processor (34, 73, 79, 89, 91, 93) receives a measure of a change in the synchronous generated voltage (Up) of the drive (10) as the characteristic quantity for an error case in the measuring system (12).
6. The device according to one of the preceding claims, characterized in that a signal (65) formed in a direct-axis current controller (54) and/or quadrature-axis current controller (48) and/or an integral component (65) is sent to signal processor (34, 73, 79, 89, 91, 93) as a quantity generated by the controller (78).
7. The device according to one of the preceding claims, characterized in that the limit value

(G) depends on at least one line parameter which causes a system deviation in the controller (78).

8. The device according to one of the preceding claims, characterized in that a measuring system model (89) which generates at least one estimate (n_{modell}) to be expected for the measuring system (12) for error detection in the measuring system.

9. The device according to one of the preceding claims, characterized in that a reversing switch (93) relays the error signal (75) of the signal processor (79) as a function of the expected estimate (n_{modell}).

10. The device according to one of the preceding claims, characterized in that the signal processor (34) is activated as a function of a quantity (IQ_{SOLL}) generated by the controller (78) and/or when a quantity (IQ_{SOLL}) generated by the controller (78) assumes a certain value (IQ_{MAX}), preferably a maximum allowed setpoint.

11. The device according to one of the preceding claims, characterized in that the signal processor (34, 73, 79, 89, 91, 93) includes a comparator (91) which generates an error signal (92, 94) as a function of an output signal of the measuring system (12) and the expected estimate (n_{modell}).

12. The device according to one of the preceding claims, characterized in that a selector device (93) is provided to make a selection between a first error monitoring (79) and a second error monitoring (89, 91) as a function of a selection quantity.

13. The device according to Claim 12, characterized in that the selector device (93) makes a selection between a first error monitoring (79) and a second error monitoring (89, 91) as a function of the expected estimate (n_{modell}).

14. The device according to one of the preceding claims, characterized in that the measuring system model (89) forms the estimate (n_{modell}) as a function of at least one controller quantity (IQ_{SOLL} , UQ_{SOLL} , ID_{IST} , $FLUSS_{\text{IST}}$) that is generated by or is a function of the controller (78).